Compaq NC6770 PCI-X Gigabit Server Adapter

User Guide

Part Number 252460-00B

June 2007 (Second Edition)

Product Version: Version 1.0

This user guide provides installation and reference information about the Compaq NC6770 PCI-X Gigabit Server Adapter.

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About This Guide

This user guide can be used for reference when servicing Compaq NC6770 PCI-X Gigabit Server Adapters.

WARNING: To reduce the risk of personal injury from electric shock and hazardous energy levels, only authorized service technicians should attempt to repair this equipment. Improper repairs can create conditions that are hazardous.

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

⚠ Important Safety Information

Before installing this product, read the *Important Safety Information* document provided.

Compaq Technician Notes

WARNING: Only authorized technicians trained by Compaq should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

WARNING: To reduce the risk of personal injury from electric shock and hazardous energy levels, do not exceed the level of repairs specified in these procedures. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create conditions that are hazardous.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- **Disconnect power from the system by unplugging all power cords from the power supplies.**
- **Do not disable the power cord grounding plug. The grounding plug is an important safety feature.**
- **Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.**

CAUTION: To properly ventilate the system, you must provide at least 7.6 cm (3.0 inches) of clearance at the front and back of the server.

CAUTION: The computer is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC cord into a properly grounded AC outlet only.

NOTE: Any indications of component replacement or printed wiring board modifications may void any warranty.

Where to Go for Additional Help

HP updates networking software frequently to include new functionality and features. Complete the following steps to get the latest drivers, firmware, and documentation.

1. Go to the HP website (http://www.hp.com).
2. Click **Support and Troubleshooting Information** from the left menu bar.
3. Type the product name in the **for product** box and press **Enter**. For example, type NC370T.
4. Download the drivers, firmware, or documentation as needed.

Integrated Management Log

The server includes an integrated, nonvolatile management log that contains fault and management information. The contents of the Integrated Management Log (IML) can be viewed with Compaq Insight Manager.

Telephone Numbers

For the name of your nearest Compaq authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.

For Compaq technical support:

- In the United States and Canada, call 1-800-OK COMPAQ.
- For Compaq technical support phone numbers outside the United States and Canada, visit the Compaq website:

  www.compaq.com

Text Conventions

This document uses the following conventions:

- *Italic type* is used for complete titles of published guides or variables. Variables include information that varies in system output, in command lines, and in command parameters in text.
- **Bold type** is used for emphasis, for onscreen interface components (window titles, menu names and selections, button and icon names, and so on), and for keyboard keys.
- `Monospace typeface` is used for command lines, code examples, screen displays, error messages, and user input.
- Sans serif typeface is used for uniform resource locators (URLs).

1

Introduction

Overview

The Compaq NC6770 PCI-X Gigabit Server Adapter is a single port, 1000Base-SX, 64-bit/133MHz-network adapter for fiber-optic environments. It is compatible with 64/100, 64/66, 64/33, and 32/33 PCI bus architectures. The NC6770 PCI-X Gigabit Server Adapter has an SC connector and LED indicators for link and activity. The NC6770 PCI-X Gigabit Server Adapter is a supported option for selected Compaq *ProLiant*™ servers.

Features

Standard features of the NC6770 PCI-X Gigabit Server Adapter include:

- 64-bit/133MHz PCI-X, compatible with 64/100, 64/66, 64/33, and 32/33 PCI bus architectures
- IEEE 802.3z 1000Base-SX Ethernet compliant
- Support for IEEE standard 802.1p
- IEEE 802.3ad (static configuration mode only)
- PCI Hot Plug compliant
- Operating system support for Microsoft Windows 2000; Microsoft Windows NT 4.0; Microsoft Windows 2000 Advanced Server; Microsoft Windows 2000 Datacenter Server; Novell NetWare 4.2, 5.0, and 5.1; and operating system support on the Compaq website for Caldera UnixWare 7, OpenUnix 8, and Linux (open source)
- Full-duplex operation
- Network Fault Tolerance (NFT)
- Transmit Load Balancing (TLB)
- Switch-assisted Load Balancing (SLB)
- Pre-boot Execution Environment (PXE)
- Dual Address Cycles (DAC)
- Jumbo Frames

Hardware Overview

The NC6770 PCI-X Gigabit Server Adapter has a single, fiber SX port and LED indicators for link and activity.

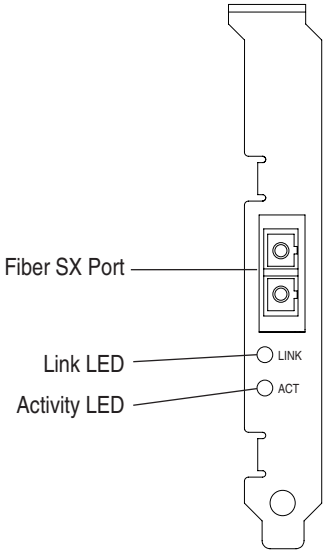

Figure 1-1: Fiber SX port and LED locations

LED Indicators

The NC6770 PCI-X Gigabit Server Adapter has two diagnostic LED indicators for the fiber SX port.

Table 1-1: LED Indicators for the NC6770 PCI-X Gigabit Server Adapter

LED Name	Display	Description
LINK	On	The adapter is receiving power; the cable connection is good.
	Off	The adapter is not receiving power or the cable connection is faulty.
ACT	Blinking	The adapter is sending or receiving network data.
	Off	The adapter is not sending or receiving network data.

2

Installing the Adapter

Overview

This chapter describes installation precautions, how to install the adapter, and how to attach the fiber network cable.

WARNING: To avoid the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with your equipment before attempting installation of the adapter.

Many servers are capable of producing energy levels that are considered hazardous. Users should not remove enclosures, nor should they bypass the interlocks provided for removal of these hazardous conditions.

Installation of this adapter should be performed by individuals who are both qualified in the servicing of computer equipment, and trained in the hazards associated with products capable of producing hazardous energy levels.

NOTE: Before removing the cover of your server, refer to the Compaq documentation for the proper methods for installing a PCI card and avoiding electric shock hazards.

Electrostatic Discharge Precautions

A discharge of static electricity from a finger or other conductor can damage components on the adapter. This can make the adapter inoperable. In addition to the following information, see Appendix B for more precautions.

To prevent electrostatic damage, observe the following precautions:

- Always properly ground yourself when touching a static-sensitive component or assembly.
- Avoid hand contact by transporting and storing parts in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free locations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.

Installing the Adapter in a Server

Refer to the Compaq ProLiant server documentation for additional information on how to safely install an I/O card in your server.

1. If the server is not PCI Hot Plug compliant, power down the server and unplug the power cord.
2. Remove the server cover and cover bracket from a PCI slot.

WARNING: **To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching them.**

CAUTION: If the server is not PCI Hot Plug compliant, power it down and unplug the power cord from the power outlet before removing the server cover. Failure to do so may damage the adapter or server.

3. Firmly seat the adapter in a PCI slot and secure the adapter bracket.

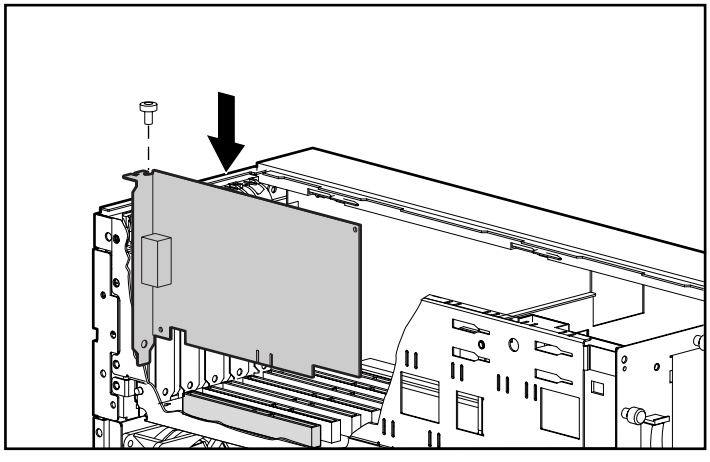

Figure 2-1: Installing the adapter in a server

4. Replace the server cover and plug in the power cord.

Connecting the Network Cable

The NC6770 PCI-X Gigabit Server Adapter has one SC fiber port. This port supports 1000Base-SX multimode fiber cable with a maximum cable length dependent on the fiber type, mode, and cable size. See Appendix C for maximum cable lengths.

To insert the network SC connector into the adapter port, line up the slot on the fiber connector with the adapter and gently push until the retainers click into place. Figure 2-2 shows the installation of an SC fiber connector in an SC fiber port.

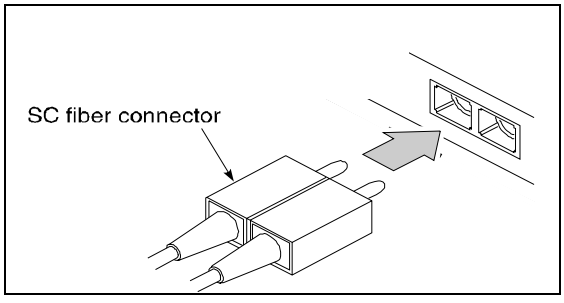

Figure 2-2: Installing an SC connector in an SC fiber port

A

Regulatory Compliance Notices

European Union Notice

Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community, and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22)—Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11)—Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2)—Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3)—Power Line Flicker
- EN 60950 (IEC 60950)—Product Safety

B

Electrostatic Discharge

Overview

To prevent damage to the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have a Compaq authorized reseller install the part.

NOTE: For more information on static electricity or assistance with product installation, contact your Compaq authorized reseller.

C

Specifications

NC6770 PCI-X Gigabit Server Adapter Specifications

Table C-1: NC6770 PCI-X Gigabit Server Adapter Specifications

Specification	Description
Network Controller Chipset	Broadcom 5101 (h)
Data Transfer Method	64-bit/133MHZ, compatible with 64/100, 64/66, 64/33, and 32/33 PCI bus architectures
Standards Supported	IEEE 802.3z, 802.3ad (static configuration mode only), 802.1p
Dimensions	6.6 x 2.8 inches (L x W), 16.76 cm x 7.11 cm
Connector and Distances	See Table C-2
Interrupts Supported	Automatically configured
Temperature Range	Operating: 0° C to 55° C / 32° F to 131° F Storage: -40° C to 85° C / -40° F to 185° F
Relative Humidity	Operating: 10% to 95% Storage: 5% to 95%
Agency Approvals	• FCC Class B • VCCI Class B • BSMI Class A • CISPR 22 Class B • EN60950 • EN 55022 Class B • EN55024 • UL • Canada UL • ICES-003 Class B
Power Requirement	1250 mA @ 5V max
Data Transmission Rate	1000 Mb/s (Full-duplex)

Fiber Cable Specifications

The NC6770 uses 1000Base-SX fiber cable to connect to the network.

Table C-2: Fiber Cable Maximum Distances for 1000Base-SX

Mode	Size	Max Distance
Multimode	62.5/125 μm	220 meters
Multimode	50/125 μm	550 meters